

SCINTILLATOR COMPOSITIONS, AND RELATED
PROCESSES AND ARTICLES OF MANUFACTURE

ABSTRACT OF THE DISCLOSURE

[0064] Scintillator materials based on certain types of halide-lanthanide matrix materials are described. In one embodiment, the matrix material contains a mixture of lanthanide halides, i.e., a solid solution of at least two of the halides, such as lanthanum chloride and lanthanum bromide. In another embodiment, the matrix material is based on lanthanum iodide alone, which must be substantially free of lanthanum oxyiodide. The scintillator materials, which can be in monocrystalline or polycrystalline form, also include an activator for the matrix material, e.g., cerium. Radiation detectors that use the scintillators are also described, as are related methods for detecting high-energy radiation.